the author contents himself with a few general remarks, leaving it to the student to apply the methods acquired in working through the foregoing portions of the book, instead of guiding him, or, we should rather say, binding him down to the usual "tables."

It would be invidious on our part to institute comparisons between the present and any existing work on the same subject; but, considering the volume as the expression of the method taught by Prof. Dittmar, we are of opinion that it stands on a decidedly higher level than the generality of such works.

Although the author's accuracy is throughout unimpeachable, there are some few questionable, or at least debateable points, which demand a passing notice.

In the first place, we regret to see the occasional appearance of what we must consider badly-constructed phrases such as the following (p. 44):—"To students who have not yet got far enough advanced to invent their own methods." Then, again, we hardly know whether to admire or to condemn the frequent inconsistencies of formulation. To give a few examples:—Phosphoric acid is written in different parts of the book in no less than four different ways: thus, at p. 11, $HHHPO_4$; p. 253, $PO(OH)_3$; p. 244, $P_2O_5 . 3H_2O = 2PH_3O_4$; at pp. 244-245, the metallic phosphates are written $PO_4HR'_2$, PO_4H_2R', and $PO_4R'_3$, and on the same page metaphosphoric acid is written HPO_3. Then on the same page (41) we find two nitrates thus formulated: $HgON_2O_5$ and $Bi(NO_3)_3$. Now, although we admire the spirit which leads a writer to adopt these different modes of formulation as being a spirit of independence, which in the *original worker* shows that he is not the slave of any hypothesis, we think that the case is entirely altered when we have to deal with *students* of the science, nothing shaking the faith of a learner so much as an apparent want of consistency.

We cannot conceive why the author has gone back to the old nomenclature—"nitrate of potash," "bisulphate of potash," "phosphate of soda," &c. Although consistency is displayed throughout the book in this matter we cannot sanction the use of a system of nomenclature which, if not entirely obsolete, is rapidly becoming so among the scientific chemists in this country. Be it understood that our protest is here again entered solely from a student's point of view. It must perplex the learner to find out that the substances he has been employing in Prof. Dittmar's laboratory under the names of "bisulphate of potash," "phosphate of soda," &c., are known elsewhere as "potassic disulphate," "hydric potassic sulphate," or "hydrogen potassium sulphate," "hydric disodic phosphate," or "hydrogen disodium phosphate," &c.

With these remarks we may conclude our notice of what we venture to look upon as a valuable addition to our literature of the important subject of chemical analysis. We are confident that Prof. Dittmar's work will stand, by virtue of its own merits, as a scheme for instructing in this branch of the science.

We have in these columns (vol. xi. p. 107) formerly expressed the opinion that the systems of analysis in general use in our schools of chemistry need reforming in certain particulars. Thus in the article referred to we found occasion to complain of the want of chemical science displayed by the majority of students practising analysis according to certain cut and dried systems of "tables." It must be conceded that the student who is thoroughly well grounded in the *scientific principles* involved in chemical analysis must take a higher position than he who works blindly from a given set of rules. That some such idea is entertained by the author of the present work is shown by the fact that the three first divisions of the book are considered enough to furnish a sufficient groundwork of scientific principles to enable the use of tables to be dispensed with altogether when the analysis of complex mixtures presents itself so that both teachers and students may now congratulate themselves on possessing a work in which a step has been taken in the right direction—a system which brings into exercise the thought, knowledge, and judgment of the analyst, instead of leaving him a mere helpless machine forced to proceed in the fixed direction laid down in this or that set of "tables."

R. M.

RICHARDSON'S "DISEASES OF MODERN LIFE"

Induced Diseases of Modern Life. By B. W. Richardson, M.D., M.A., F.R.S. 8vo. Pp. 520. (London: Macmillan and Co., 1876.)

HEALTH is proverbially one of the greatest blessings man can enjoy, and yet in this hardworking, hurrying, struggling age, many a one deliberately sacrifices it in the endeavour to succeed in his pursuits, commercial, literary, or scientific. Success is the object of their desires, and they are quite willing to pay for it the price of broken health and shortened life. This is even more the case with literary and scientific than with commercial men, for the latter generally look forward to several years of retirement and ease as a reward for their labours, while the former are rather anxious that their work itself shall be such as to secure them a certain place among the world's great ones, than concerned whether their fame be posthumous or not. In struggling to accomplish it they too often forget that "the race is not to the swift," but rather to the long enduring, and that if Cuvier or Darwin had died before reaching middle age, not only would their names have remained comparatively unknown, but science would have sustained an irreparable loss. Sometimes the worn-out body reminds them only too forcibly of the dependence of the mind upon it, work becomes impossible, every occupation must be renounced for a time, and the vantage ground which has been gained by unremitting toil is entirely lost. Nay more, the exhausted energies require a long time to recover; when work is resumed it can rarely be carried on with the same vigour as before, and meanwhile some slower but steadier competitor steps in front and wins the longed-for prize, or makes the eagerly-desired discovery. Several years ago we began to ascend the long flights of steps which lead to the higher part of the island of Capri, at the same time with another party. They ran briskly up while we went slowly on, and they reached the top of the first flight while we were only half way up. But here they were out of breath and stopped to rest. We, on the contrary, never stopped; if breath began to fail we went more slowly, but we never stood still. The consequence was that we passed the other party about the middle of the second flight, and

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by the time they had reached its top, we had mounted the third. In such a competition as this the increasing difficulty of respiration soon warns a man to stop, but in the life-long struggle for existence it is not so easy for one to know when he is getting out of breath and to relax his exertions in time. As a help to do this Dr. Richardson's work is most valuable, for he paints in vivid colours the symptoms of disease from worry and mental strain, beginning with the slighter ones of restlessness, irritability, and "an overweening desire to do more and yet more work," and ending with dementia, diabetes, &c. He gives a most salutary warning to those who strive to counteract the effects of mental overwork by adding to it hard bodily exercise, and his remarks on physical strain should be carefully perused by all young athletes. If his cautions were constantly attended to, we would have fewer instances of break-down either mental or physical. The effects of the passions on the body are next taken up, and then the action of alcohol and tobacco discussed at length.

Dr. Richardson seems to regard alcohol as an unmitigated evil, and although he acknowledges that sometimes tobacco may be useful in soothing the excited brain, he omits this beneficial action from the summary which he gives of the effects of smoking, and includes only the baneful effects which follow the abuse of the weed. This part of his book recalls to our mind a lecture in which the late Prof. Hughes Bennett denounced pastry as one of the chief causes of consumption. No one can doubt that pastry, alcohol, and tobacco are all capable of abuse, but whether their use is to be entirely prohibited on that account is an entirely different question.

The chapters on disease from the use of narcotics, and from late hours and broken sleep are especially interesting and instructive; and that on disease from food contains some most useful remarks on the injurious effects of too much tea, coffee, soda-water, seltzer, and sweets, as well as on the consequences of over-eating.

In treating of diseases from impurity of air the author mentions the bad effects of stoves, but he might also with advantage have drawn attention to the languor and inability to work which may be induced by burning much gas in the room where one is thinking or writing. He might have mentioned the Italian proverb, that when you have built a house you should make your enemy live in it for the first year, your friend for the second, and should inhabit it yourself in the third; but his observation of the occurrence of eight cases of consumption and fourteen of rheumatic fever in one row of pretty houses during the first two years after they were built may perhaps convince people of the danger of inhabiting damp dwellings, without any additional testimony.

Other chapters deal with diseases incident to some occupations, disease from sloth and idleness, from errors of dress, from imitation and moral contagion, automatic disease and hypochondriasis, and intermarriage of disease. The book concludes with a summary of practical applications or short directions how to avoid or counteract the sources of disease already discussed.

The work is of great value as a practical guide to enable the readers to detect and avoid various sources of disease, and it contains in addition several introductory chapters on natural life and natural death, the phenomena of disease, disease antecedent to birth, and on the effects of the seasons, of atmospheric temperature, of atmospheric pressure, of moisture, winds, and atmospheric chemical changes, which are of great general interest. In several points we do not agree with Dr. Richardson; we would like him sometimes to give fuller reasons for his dogmatic statements; we think he has perhaps pictured the effects of overwork in too glaring colours, and we think he has been somewhat unfair to alcohol and tobacco. But his book is most suggestive; it is written in a most attractive style, and it may assist the work and prolong the days of some who are unwittingly destroying their health, if they will only learn and attend to its warnings and counsels.

OUR BOOK SHELF

Over the Sea and Far Away, being a Narrative of Wanderings Round the World. By Thomas Woodbine Hinchliff, M.A., F.R.G.S., President of the Alpine Club. With Fourteen Illustrations. (London: Longmans and Co., 1876.)

Mr. HINCHLIFF, who is already known as the author of one or two pleasant narratives of travel, managed, in one year, to do 36,000 miles of ocean, besides spending a considerable time in exploring various regions of America and Asia. His reasons for writing this considerable book on his tour of the world are to induce other tourists to follow his example, not in writing a book, but in leaving the beaten paths and learning something about and enjoying the many beauties of South America especially, and also because he believes there is abundant room for a further and more detailed account of the natural aspect of many of the countries visited, "especially with regard to their scenery, their flowers, ferns, and fruits." We are bound to say that Mr. Hinchliff, from these points of view, has fairly justified the publication of the present work. He writes in excellent spirits, tells clearly what he saw, keeps up the interest from beginning to end, and the general reader, at all events, will find many things in the book quite new to him. Mr. Hinchliff spent most of his time in Western North America, in California, and the Yosemité Valley especially, in Brazil, Peru, and Japan. He is a good and enthusiastic botanist, a shrewd observer, and a clear narrator. He managed to see a great deal that was well worth seeing of the countries visited, their products, and their inhabitants, and although he opened up no new ground, he has been able to suggest aspects and describe phases that, we daresay, even those familiar with the literature of travel will recognise as original. The illustrations are good and appropriate, and altogether we can recommend the work as a really interesting and instructive record of a long tour.

Une Réforme Géométrique. Introduction à la Géométrie descriptive des Cristalloïdes. Par le C^{te} Léopold Hugo. (Paris, 1874.)

Géométrie Hugodomoïdale, anhellénique, mais Philosophique et Architectonique.

La Question de l'Équidomoïde et des Cristalloïdes Géométriques. Par le C^{te} Léopold Hugo. (Paris, 1875.)

ÉQUIDOMOÏDE : Sphère : : Prisme : Cylindre. "Équidomoïde, c'est en effet le nom que j'ai proposé pour la figure polygonale qui se place *avant* la sphère, comme le prisme et la pyramide se placent avant le cylindre et le cône en vraie philosophie. Il y a donc des équidomoïdes trigonaux, tétragonaux, pentagonaux, et ainsi de suite jusqu'à ce qu'on arrive à la sphère, leur sœur cadette . . . mon nouveau système, envisageant toutes les figures polygonales qui sont les aînées de famille de tes (the extract is taken from a hypothetical address to Archimedes), sphéroïdes et conoïdes, leur donne le nom générique de *domoides;* puis j'y fais adjonction, comme préfixe, des

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